1 DISTRIBUTED RESOURCE RESERVATION SYSTEM FOR ESTABLISHING A

2 PATH THROUGH A MULTI-DIMENSIONAL COMPUTER NETWORK TO

3 SUPPORT ISOCHRONOUS DATA

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5 ABSTRACT OF THE DISCLOSURE

6 A distributed method of establishing a path in a multi-dimensional computer network

7 comprising a plurality of nodes for transmitting isochronous data from a source node to a

8 destination node is disclosed. A request packet is injected into the network, the request packet

9 specifying a request to transmit the isochronous data from one of a plurality of source nodes.

10 The request packet is routed to at least one the plurality of source nodes, and the source node

11 determines whether it has sufficient resources to support transmitting the isochronous data. If the

12 source node comprises sufficient resources to support transmitting the isochronous data, the

13 source node reserves resources within the source node to support transmitting the isochronous

14 data, and transmits an ack packet from the source node to a first neighboring node. The first

15 neighboring node determines whether it has sufficient resources to support transmitting the

16 isochronous data. If the first neighboring node comprises sufficient resources to support

17 transmitting the isochronous data, the first neighboring node reserves resources within the first

18 neighboring node to support transmitting the isochronous data, and transmits the ack packet to an

19 adjacent node. If the first neighboring node does not comprise sufficient resources to support

20 transmitting the isochronous data, the first neighboring node transmits a nack packet to the

21 source node and the source node transmits the ack packet to a second neighboring node.